

OROFINO GOLF COURSE (PWS # 2180025) SOURCE WATER ASSESSMENT FINAL REPORT

February 26, 2003



State of Idaho Department of Environmental Quality

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Executive Summary

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality (DEQ) is completing the assessments for all Idaho public drinking water systems. The assessment for your particular drinking water source is based on a land use inventory within a 1,000-foot radius of your drinking water source, sensitivity factors associated with the source, and characteristics associated with either your aquifer or watershed in which you live.

This report, *Source Water Assessment for the Orofino Golf Course: Public Water System (PWS) #2180025* describes the public drinking water system, the associated potential contaminant sources located within a 1,000-foot boundary around the drinking water source, and the susceptibility (risk) that may be associated with any associated potential contaminants. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and is not intended to undermine the confidence in your water system.**

The *Orofino Golf Course* drinking water system consists of one developed spring that serves approximately 150 people through two connections. The system rated moderately susceptible for inorganic contaminants (IOCs), volatile organic contaminants (VOCs), synthetic organic contaminants (SOCs), and microbial contaminants. The lack of system construction information combined with the contaminant sources near the spring contributed to the moderate susceptibility rating.

The initial computer generated contaminant source inventory conducted by DEQ did not locate any potential contaminant sources with the 1,000-foot boundary. However, the Geographic Information System (GIS) map shows that the delineation includes Highway 12 and the Clearwater River as potential contaminant sources. Additionally, the 1997 sanitary survey indicates that chemicals may be used on the golf course that may affect the quality of the drinking water from the spring. A copy of the susceptibility analysis worksheet for the spring for your system along with a map showing any potential contaminant sources is included with this summary.

Susceptibility Analysis

The susceptibility of the source at the intake was ranked as high, moderate, or low risk according to the following considerations: physical integrity and construction of the intake, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each intake is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking.

System Construction

Spring construction scores are determined by evaluating whether the spring has been constructed according to Idaho Code (IDAPA 58.01.08.04) and if the spring's water is exposed to any potential contaminants from the time it exits the bedrock to when it enters the distribution system. If the spring's intake structure, infiltration gallery, and housing are located and constructed in such a manner as to be permanent and protect it from all potential contaminants, is contained within a fenced area of at least 100 feet in radius, and is protected from all surface water by diversions, berms, etc., then Idaho Code is being met and the score will be lower. If the spring's water comes in contact with the open atmosphere before it enters the distribution system, it receives a higher score. Likewise, if the spring's water is piped directly from the bedrock to the distribution system or is collected in a protected spring box without any contact to potential surface-related contaminants, the score is lower.

The Orofino Golf Course drinking water system rated high susceptibility for system construction. Very little information concerning the construction and condition of the spring as a drinking water source was provided. When no information is available, a higher, more conservative, score is given.

Potential Contaminant Source and Land Use

The spring rated low for IOCs (e.g., arsenic, nitrate), VOCs (e.g., petroleum products), SOCs (e.g., pesticides), and microbial contaminants (e.g., bacteria). The limited number of potential contaminant sites surrounding the spring and the predominant woodland land use contributed to the low score.

Final Susceptibility Rating

Detections of IOCs above drinking water standard MCLs, repeat detections of total coliform bacteria, fecal coliform bacteria, or *E-coli* bacteria, or a detection of an SOC or VOC in a water chemistry test will automatically give a high susceptibility rating for an intake despite the land use of the area because a pathway for contamination already exists. Compared to the System construction, land use is heavily weighted in the overall score. Therefore, even though the system construction rated high, a limited number of potential contaminant sources and the limited land use counteracted the rating to give an overall moderate score. According to State Drinking Water Information System (SDWIS) database, total coliform bacteria have been detected from 1994 to 1999 with confirmed detections in September and October 1994. Nitrate, barium, and sodium have also been detected in the drinking water system but at levels far below the maximum contaminant levels (MCLs) set by the EPA. Additionally, Highway 12, the Clearwater River, and possible chemicals such as pesticides and herbicides applied to the golf course potentially contribute contaminants to the aquifer.

Table 1. Summary of Orofino Golf Course Susceptibility Evaluation

Source	Susceptibility Scores ¹								
	Contaminant Inventory				System Construction	Final Susceptibility Ranking			
	IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Spring	L	L	L	L	H	M	M	M	M

¹H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility,

IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Options for Drinking Water Protection

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For Orofino Golf Course, drinking water protection activities should focus on correcting any deficiencies outlined in the sanitary survey (an inspection conducted every five years with the purpose of determining the physical condition of a water system’s components and its capacity). Due to the occasional detection of total coliform bacteria in distribution within the water source, a routine disinfecting system should be considered. Chemicals such as pesticides and herbicides should not be applied to the areas that will ultimately affect the quality of the spring water. Partnerships with state and local agencies and industry groups should be established and are critical to success. You may want to establish a dialog with the relevant state and local agencies related to the efficient and correct protection of springs as a drinking water source and options for disinfecting systems. Drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

Due to the time involved with the movement of ground water, drinking water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. A strong public education program should be a primary focus of any drinking water protection plan because the delineations show large areas of urban land use. There are multiple resources available to help communities implement protection programs, including the Drinking Water Academy of the EPA. For areas where transportation corridors transect the delineation, the Department of Transportation should be included in protection activities. Drinking water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil Conservation District, and the Natural Resources Conservation Service.

Assistance

Public water suppliers and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Lewiston Regional DEQ Office (208) 799-4370

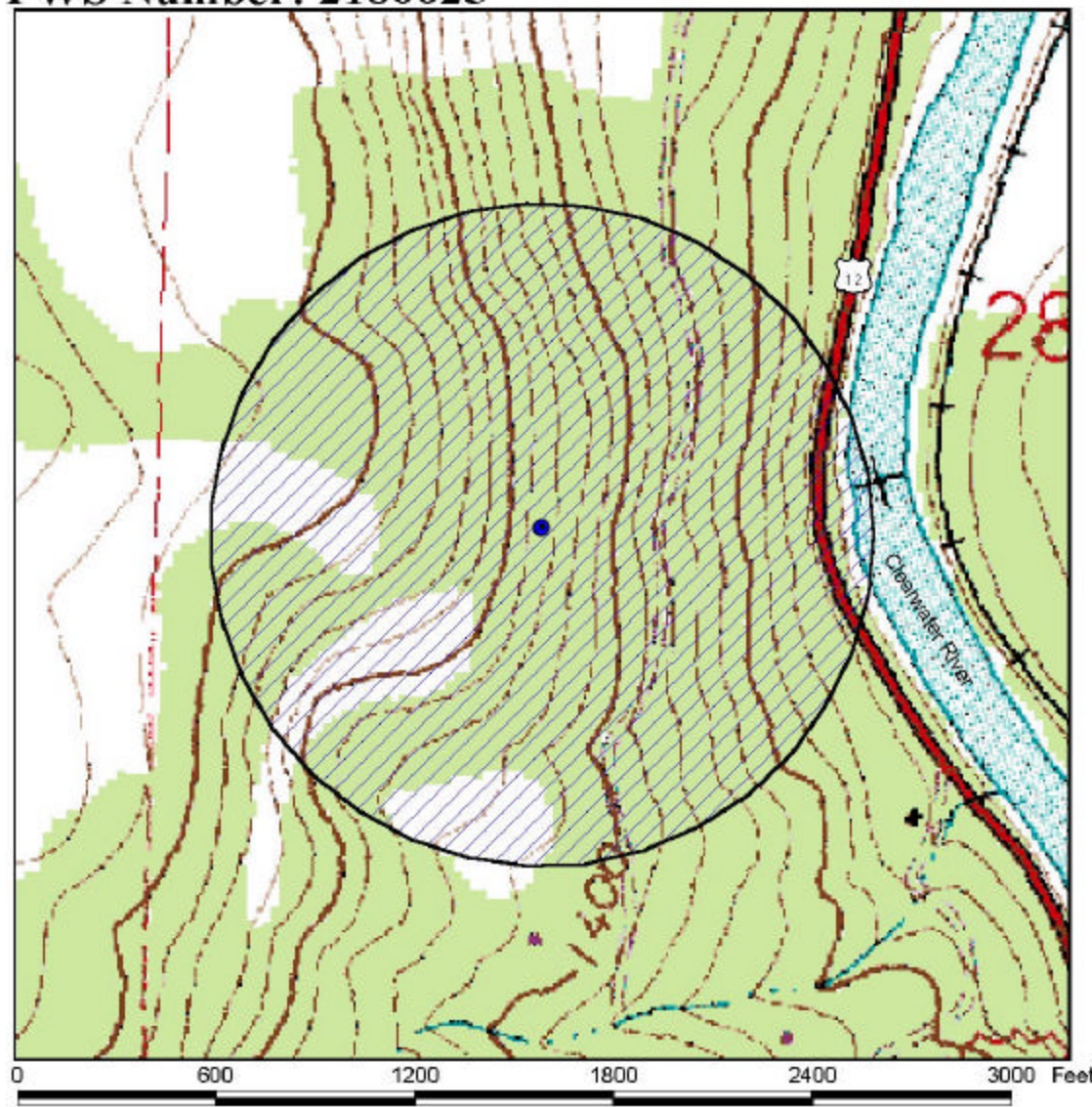
State DEQ Office (208) 373-0502

Website: <http://www.deq.state.id.us>

Water suppliers serving fewer than 10,000 persons may contact Melinda Harper (mlharper@idahoruralwater.com), Idaho Rural Water Association, at (208) 343-7001 for assistance with drinking water protection (formerly wellhead protection) strategies.

Orofino Golf Course: SPRING

PWS Number: 2180025



LEGEND

- 1B (3 yr TOT)
- Wellhead
- Enhanced Inventory
- CERCLIS Site
- RICRIS Site
- Dairy
- LUST Site
- Closed UST Site
- Open UST Site
- Business Mailing List
- NPDES Site
- Mine
- AST
- Toxic Release Inventory
- SARA Title III Site (EPCRA)
- Recharge Point
- Injection Well
- Group1 Site
- Cyanide Site
- Landfill
- Wastewater Land App. Site

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POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (IDEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25% of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by IDEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score = Intake Construction + (Potential Contaminant/Land Use x 0.273)
- 2) Microbial Final Score = Intake Construction + (Potential Contaminant/Land Use x 0.375)

Final Susceptibility Scoring:

0 - 7 Low Susceptibility

8 - 15 Moderate Susceptibility

16 -21 High Susceptibility

Surface Water Susceptibility Report

Public Water System Name :

OROFINO GOLF COURSE

Well# : SPRING

Public Water System Number 2180025

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1. System Construction

SCORE

Intake structure properly constructed	NO	1
Infiltration gallery or well under the direct influence of Surface Water	NO	0

Total System Construction Score 3

2. Potential Contaminant Source / Land Use

IOC Score	VOC Score	SOC Score	Microbial Score
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Predominant land use type (land use or cover)	BASALT FLOW, UNDEVELOPED, OTHER	0	0	0	0
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Farm chemical use high	NO	0	0	0	
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Significant contaminant sources *	NO				
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Sources of class II or III contaminants or microbials present within the 500' of the intake and the		3	2	3	2
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Agricultural lands within 500 feet	YES				
Less than 25% Irrigated Agriculture		0	0	0	0

Three or more contaminant sources	NO	0	0	0	0
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Sources of turbidity in the watershed	YES	1	1	1	1
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Total Potential Contaminant Source / Land Use Score 7 5 7 5

3. Final Susceptibility Source Score

10 8 10 8

4. Final Source Ranking

Moderate Moderate Moderate Moderate

* Special consideration due to significant contaminant sources
The source water has no special susceptibility concerns